



Conference Abstract

A step forward in the identification of compounds interfering with the Embryonic Lethal Abnormal Vision (ELAV) protein - RNA complexes

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Abstract

RNA-protein interactions are pivotal in the regulation of biological systems and they are implicated in gene expression defect. In fact, RNAs in cells are in complex with RNA-binding proteins (RBPs) which influence every aspect of their biogenesis and function. Recent works have highlighted the involvement of these complexes in various pathological pathways and their potential as drug targets, suggesting a fascinating route for discovering new drugs able to inhibit or enhance gene expression Campos-Melo et al. (2014).

Among the most studied and better characterized RBPs are ELAV (Embryonic Lethal Abnormal Vision) or Hu proteins whose complexes with various RNAs are of great relevance in the etiology of different dysfunctions such as cancer, inflammation and neurodegenerative diseases. Recent studies have unearthed the concept of druggability of ELAV proteins and NMR has been proposed as a useful tool for investigating “protein-RNA” interactions (Nasti et al. 2017, Rossi et al. 2009).

Here we present our recent efforts to follow up with a rational investigation on ELAV subtype HuR. Given the described attitude of certain natural compounds to interfere with

ELAV-RNA complexes Kwak et al. (2009), we studied the interaction between HuR protein and a number of natural structurally-related compounds, including flavones, flavonols and coumarins. These results constitute the starting point to define the features of the “ideal ligand”.

Keywords

Embryonic Lethal Abnormal Vision (ELAV) protein - RNA complexes, NMR, natural compounds

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